

**In the Claims** (Clean Copy as Amended)

Please amend the claims to read as follows:

11. Isolated and purified TWIK-1 protein constituting a potassium channel having two pore domains and four transmembrane domains.
12. The protein according to claim 11 comprising SEQ ID NO: 2, or a functionally equivalent derivative of said sequence.

Please cancel claim 13.

A copy of the version with markings to show changes made to the claims is attached hereto.

**Remarks**

Reconsideration of the Restriction Requirement imposed in Paper No. 4 is respectfully requested. In the current Action, it is stated that, "the use of protein as immunogen was given as only one, of many, examples in which the specific product in Group II could be used in a process materially different from Group III." However, in Paper No. 4, it is stated that inventions II and III are distinct because, "In the instant case the protein product as claimed can be used in a materially different process of using that product; for instance, the potassium channel protein could be used as an immunogen to make an antibody." Thus, the use of the protein as an immunogen is the only example given in the Restriction Requirement. Again, as the Patent Office considers that insufficient to meet the requirements of 35 USC § 101, it is requested that these two groups be combined.

Regarding the claim of priority in this case, Applicant is in the process of obtaining a copy of the foreign priority document and will forward it as soon as Applicant is able.

Objection has been made to the Specification in this case due to the lack of section headings. Specifically, there is no sub-section entitled, "Brief Description of the Drawings." Such a heading has now been added, and it is respectfully suggested that this objection had been obviated.

Claims 11-13 have been rejected under 35 USC § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the language, "properties and structure of a TWIK-1 type channel" is considered vague and indefinite. The broad claim 11 in the present application has been amended to remove the reference to "properties and structure" of a TWIK-1 type channel. Accordingly, Applicants believe that this objection has been obviated.

Claims 11-13 have been rejected under 35 USC § 101, "because the claimed invention lacks a credible, substantial, specific, or well-established utility." Initially, the Office's attention is drawn to the statement in the present Office Action that, "the use of protein as an immunogen was give as only one, of many, examples in which the specific product of Group II [the group under consideration in the present case] could be used in a process materially different from Group III." Thus, stating that the invention has a specific utility.

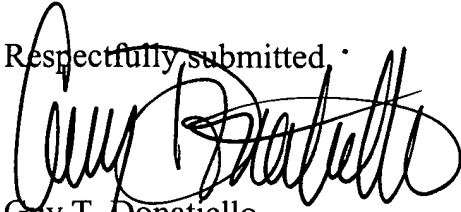
Nevertheless, Applicants point out that on page 3 of the present application, it is explained that the abundance and presence of TWIK-1 in a large number of tissues confer on it a fundamental role in the transport of potassium in a large number of types cells. Accordingly, the protein provides a new means for screening drugs capable of modulating the activity of these new potassium channels, and preventing or treating the diseases in which these channels are involved. Furthermore, the protein also allows for the development of a screening tool which would detect the absence or deficiency of the TWIK-1 protein in tissues, indicating a diseased state or a propensity to develop such a state. Since the role of the TWIK-1 protein in potassium transport is known, the development of a test for a deficiency of the protein and thus potassium transport in tissues is a credible asserted utility which one skilled in the art would readily recognize for such invention.

Claim 13 is drawn to a pharmaceutical composition comprising the TWIK-1 potassium channel of the present invention. This claim had been objected to as not enabling. Applicants have canceled claim 13 and respectfully request that this rejection be withdrawn.

Claims 11 and 12 have been rejected under 35 USC § 102(a) as anticipated by Ketchum. The claims of the present application have been amended to indicate that the claimed protein includes two pore domains and four transmembrane domains. The protein of Ketchum has two pore domains but eight transmembrane domains. Accordingly, Ketchum does not anticipate the claims as amended.

Accordingly, Applicants believe that all claims as amended are clearly allowable and respectfully request early and favorable notification to that effect.

Respectfully submitted .

A handwritten signature in black ink, appearing to read "Guy T. Donatiello", written over the typed name and registration information.

Guy T. Donatiello  
Registration No. 33,167  
Attorney for Applicants

GTD:cat  
(215) 751-2463  
June 20, 2001

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Claims**

11. Isolated and purified TWIK-1 protein constituting a potassium channel having two pore domains and four transmembrane domains, ~~exhibiting the properties and structure of the TWIK-1 type channel.~~
12. The Pprotein according to claim 11, ~~the amino acid sequence of which is represented in the attached sequence list as~~ comprising SEQ ID NO: 2, or a functionally equivalent derivative of ~~this~~ said sequence.
13. ~~Pharmaceutical composition for the compensation of a deficiency in the potassium channels at the level of one or more tissues, characterized in that it comprises a protein according to claim 11 or 12.~~